

Comment Summary and Responses
Comment Deadline: 12:00 p.m., April 20, 2017
Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate Stakeholder-Developed
Groundwater Quality Management Measures for Salts and Nutrients in the Raymond Groundwater Basin
in Los Angeles County

List of Commenters:

Comment Reference	Commenter/Organization	Representative
1	City of Pasadena Water and Power Department	Gurcharan S. Bawa (General Manager)
2	Ken Kules (Private Citizen)	Self

Response to Comments:

No.	Author	Comment	Response
1.0	City of Pasadena Water and Power Department (PWP)	<p>The City of Pasadena, Water and Power Department (PWP), appreciates the opportunity to comment on the Regional Water Quality Control Board's, Los Angeles Region, proposed amendment to the Basin Plan that would incorporate stakeholder-proposed control measures for salts and nutrients in the Raymond Basin. PWP, a public agency that supplies water to over 165,000 customers in an area that overlies the Raymond Basin, strongly supports both the Regional Board's efforts to increase recycled water use while protecting water quality and approval of the amendment to the Basin Plan.</p> <p>The amendment will allow for recycled water to be used in the Raymond Basin, and is an important step in advancing Pasadena's Non-Potable Water Project towards formal approval. This project, with all six phases completed through the year 2038, will deliver up to 3,100 AFY of recycled water, and offset up to 10% of the total water demand. Bringing recycled water to Pasadena's service area is critical to</p>	Comment noted.

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		furthering our goal of providing a safe, local, reliable, and drought-resistant water supply and strongly aligns with the Regional Board's Recycled Water Policy.	
2.0	Ken Kules	I respectfully offer the following comments regarding the Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Program of Implementation Consisting of Stakeholder-Developed Groundwater Quality Management Measures for Salts and Nutrients in the Raymond Groundwater Basin (Basin Plan Amendment). I regrettably did not raise my comments before the Los Angeles Water Board In December 2016 because I attempted to first get clarification from the City of Pasadena regarding the Raymond Basin Salt and Nutrient Management Plan (SNMP) rationale for the assumption that only 10 percent of the TDS in recycled water would reach the groundwater table. Pasadena Water and Power responded to my request by memorandum dated December 14, 2016 (copy attached). The memorandum was not received in time to address the issues at the December 8, 2016 Los Angeles Water Board hearing.	Comment noted.
2.1	Ken Kules	The SNMP and Draft Substitute Environmental Document (SED) that are the basis for the Basin Plan Amendment <u>substantially</u> underestimate the amount of TDS that will return to the groundwater table as a result of irrigation with recycled water. The estimate of salt loading relies on a simplistic and unsubstantiated assumption regarding the fate of TDS in recycled water. The amount of salt that will be introduced to the groundwater by Pasadena's Non-Potable Water Project will likely be 10 times that estimated by the SNMP.	The Salt and Nutrient Management Plan (SNMP) includes an assessment tool that was developed to determine how much additional salt and nutrient loading could be accommodated in the Raymond Basin without impacting beneficial uses of the Raymond Basin. In the absence of actual planned recycled water projects, at the time of plan development, a hypothetical groundwater replenishment project with water quality similar to other local recycled water projects was evaluated. The analysis determined the maximum annual recharge of water from this

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			<p>project that could occur in each subarea (Monk Hill, Pasadena, and Santa Anita) of the Raymond Basin, before exceeding 10 percent of the assimilative capacity. This analysis assumed 100% of the water (and accompanying salts and nutrients) used for direct recharge would reach the groundwater basin.</p> <p>While Pasadena's Non-Potable Water Project was not specifically evaluated, it was assumed that approximately 10% of irrigated water (and accompanying constituents) from such a recycled water project would reach the groundwater basin. This estimate was based on a report from the US Geological Survey¹, which estimated that deep percolation beneath irrigated sites ranged between 5 and 14 percent of applied irrigation water.</p> <p>As this and other recycled water irrigation projects are identified and further developed, additional analysis may need to be conducted to more closely estimate the volume and quality of water that will recharge the basin.</p> <p>In addition, the groundwater quality monitoring program that is part of the SNMP will allow such estimates to be further refined.</p>
2.2	Ken Kules	The SNMP analysis does not use the most-recent water quality data and over-estimates assimilative capacity as a result. The 2016 SNMP analyses use data prior to mid-2012. An examination of annual Consumer Confidence Reports prepared by the City	Salt and nutrient management planning for the Raymond Basin was a long-term effort that began in 2010. Development of the modeling/assessment tool began in 2012 at which time the most recent data sets were

¹ Arnold, L. R. "Estimates of Deep-Percolation Return Flow Beneath a Flood- and a Sprinkler-Irrigated Site in Weld County, Colorado, 2008–2009." Scientific Investigations Report 2011-5001. U.S. Department of Interior and U.S. Geological Survey.

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		<p>of Pasadena - a groundwater producer in the Raymond Basin - indicate that beginning in 2013, TDS in groundwater began rising dramatically. The increase in Pasadena's groundwater TDS since 2012 has a significant negative impact on the assimilative capacity. No action to introduce TDS loading from new supply sources into the Raymond Basin should be approved without first implementing actions that can be shown to reduce TDS in the groundwater from 2015 levels.</p>	<p>used. For such long-term planning efforts, it is necessary to have a cut-off point for data collection in order to allow the analysis to go forward.</p> <p>That notwithstanding, the increasing trends mentioned by the commenter are acknowledged in the Basin Plan amendment on page 10 as follows:</p> <p><i>"...review of available data suggests an increasing trend for TDS, chloride and sulfate concentrations in the Monk Hill and Pasadena subareas. Also, there is considerable annual variation in water quality for each constituent. Generally, water quality concentrations vary with many environmental factors, including the volume of groundwater in storage. The water quality concentrations in the Raymond Basin appear to be inversely related to groundwater in storage, increasing as groundwater levels decrease, and vice versa."</i></p> <p>The recent increasing trend is reflective of the drought conditions that existed over the period of plan development.</p> <p>Furthermore, the SNMP will be updated periodically to reflect results from groundwater quality monitoring (from the SNMP Monitoring Program). Such updates will include revisions to assimilative capacity estimates as well as groundwater concentrations and trends in years subsequent to Water Year 2011-12.</p> <p>Monitoring results will also be used to inform future groundwater quality management measures to address such trends.</p>

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2.3	Ken Kules	<p>The SNMP uses incorrect data for TDS level in Metropolitan Water District's imported supply for 2011. The SNMP modeling uses 380 mg/l for MWD Weymouth WRP supply TDS in 2011 but a much higher value of 440 mg/l has been widely reported in Raymond Basin water agency Consumer Confidence Reports.</p> <p>Use of the higher value would result in a reduction in calculated assimilative capacity.</p>	<p>The Raymond Basin SNMP reports data in Water Years (October to September); consumer confidence reports report data in Calendar Years (January to December). The difference in the reporting period changes the reported average of a constituent concentration. The Weymouth Treatment Plant effluent contains surface water from both the Colorado River and the State Water Project. These two sources can have widely varying TDS concentrations. Likewise, the blended Weymouth Treatment Plant effluent contains a variable percentage of each source water, which changes throughout the year. The Weymouth Treatment Plant effluent TDS concentration reported in the Raymond Basin SNMP is taken from monthly TDS concentrations reported by MWD, not from calendar year annual averages as reported in Consumer Confidence Reports.</p> <p>The commenter refers to Appendix W (Pasadena Subarea TDS Balance) where a TDS concentration of 380 mg/L for the Weymouth effluent is used in WY 2010-11. Hypothetically, even if one assumes a higher TDS concentration of 440 mg/L was a more appropriate concentration to use in the TDS balance model than 380 mg/L, the assimilative capacity in the Pasadena subarea would not change because no injection of treated imported water occurred in that year. In the Monk Hill subarea (Appendix S), the assimilative capacity for Water Year 2010-11 would theoretically decrease from 49.35 to 49.32 mg/L if 440 mg/L were used for the Weymouth TDS concentration, which is</p>

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			<p>statistically insignificant.</p> <p>Also, assimilative capacity is the difference between a parameter's Basin Plan objective and the average concentration of the parameter in a basin. This calculated value is not a direct function of potential sources of water – rather, it is a reflection of existing basin water quality. Therefore, a potential discrepancy in reported imported water TDS levels would not affect the estimated assimilative capacity of the basin.</p>